## CLAIMS

WHAT IS CLAIMED IS:

1. A mobile event triggering method, comprising:

detecting an entry of a vehicle into a defined event location;

evaluating a vehicle status with respect to at least one entry criterion;

conducting an event entry action when the vehicle status meets said at least one entry criterion;

evaluating the vehicle status with respect to at least one mobile event criterion corresponding to at least one mobile event;

activating said at least one mobile event when the vehicle status meets said at least one mobile event criterion corresponding to said at least one mobile event;

evaluating the vehicle status with respect to at least one exit criterion; and

conducting an event exit action when the vehicle status meets said at least one exit criterion.

2. The method of claim 1, further comprising:

detecting an event timeout condition where the vehicle status does not meet the exit criteria within a predetermined time period; and

conducting a timeout action when the event timeout condition occurs.

3. The method of claim 1, wherein the step of detecting entry of the vehicle into the defined event location comprises detecting entry of the vehicle within a radius of a location point.

4. The method of claim 3, wherein the step of detecting entry of the vehicle into the defined event location further comprises detecting a heading of the vehicle within a tolerance of a defined event heading.

5. The method of claim 1, wherein said at least one mobile event criterion includes at least one selected from the group consisting of a defined schedule adherence to a timepoint and a passenger count adherence.

6. The method of claim 1, wherein said at least one mobile event criterion evaluates the vehicle status against a numerical value.

7. The method of claim 1, wherein said at least one mobile event criterion evaluates the vehicle status against a true/false condition.

8. The method of claim 1, wherein said at least one mobile event criterion includes an enable/disable condition, and wherein the method further comprises checking whether said at least one mobile event is enabled.

9. The method of claim 1, wherein the step of evaluating the vehicle status according to at least one mobile event criterion comprises evaluating the vehicle status according to a plurality of mobile event criteria, and wherein the activation step is conducted when the plurality of mobile event criteria are met.

10. The method of claim 1, wherein the step of evaluating the vehicle status with respect to at least one exit criterion comprises detecting an earlier of a vehicle travel over a defined distance or passing of a defined time period after the event entry action.

11. The method of claim 1, wherein said at least one mobile event criterion comprises a plurality of mobile event criteria for evaluating the vehicle status.

12. The method of claim 1, wherein said at least one mobile event comprises a plurality of mobile events, and wherein said at least one mobile event criterion comprises a plurality of mobile event criteria.

13. The method of claim 12, wherein the method further comprises sequencing the plurality of mobile events in a defined event hierarchy, wherein a given event hierarchy contains a parent event and at least one child event.

14. The method of claim 13, wherein the step of evaluating the vehicle status with respect to said plurality of mobile event criteria comprises:

monitoring a plurality of parent events in an event pool; and

enabling said at least one child event associated with at least one parent event when the vehicle status meets mobile event criteria associated with said at least one parent event.

15. The method of claim 13, further comprising:

detecting an event timeout condition where the vehicle status does not meet at least one of the exit criteria within a first predetermined time period;

detecting an event timeout condition where the child event is not enabled within a second predetermined time period; and

conducting a timeout action when the event timeout condition occurs.

16. The method of claim 1, further comprising:

evaluating the vehicle status with respect to a time profile definition; and

carrying out the steps of evaluating the vehicle status with respect to said at least one entry criterion, at least one mobile event criterion, and at least one exit criterion when the vehicle status meets the time profile definition.

17. The method of claim 1, wherein the step of activating at least one mobile event comprises at least one of invoking a traffic signal priority request and a traffic signal priority cancellation.

18. The method of claim 1, further comprising:

evaluating a second vehicle status corresponding to a second vehicle with respect to at least one entry criterion;

verifying the vehicle status and the second vehicle status according to at least one traffic control system criterion; and

approving activation of at least one mobile event corresponding to at least one of the vehicle status and the second vehicle status based on the verifying step.

19. A mobile computer for use in a traffic signal priority control system, comprising:

a storage device containing at least one event definition data block, wherein said at least one event definition data block contains mobile event criteria defining at least one mobile event, and

a processor containing an algorithm that evaluates a vehicle status with respect to the mobile event criteria and activates the mobile event if the mobile event criteria are met.

20. The mobile computer of claim 19, wherein the mobile event criteria defines a parent event and at least one child event depending on the parent event, and wherein the processor evaluates the vehicle status with respect to a sequence of mobile events containing a parent event and at least one child event, and wherein the processor activates the mobile event if the mobile event criteria for the parent event and said at least one child event are met.

21. A traffic signal priority control system, comprising:

a mobile computer having

a storage device containing at least one event definition data block, wherein said at least one event definition data block contains mobile event criteria defining at least one mobile event, and

a processor containing an algorithm that evaluates a vehicle status with respect to the mobile event criteria and activates the mobile event if the mobile event criteria are met;

a vehicle-mounted device that responds to activation of the mobile event;

a receiving device that responds to the response of the vehicle-mounted device to the activation of the mobile event; and

a traffic signal control that controls a traffic signal based on response of the receiving device.

22. The traffic signal priority control system of claim 21, wherein the receiving device is a street-mounted detector, and wherein the vehicle mounted-device is a signal emitter having an emitter state corresponding to activation of the mobile event.

23. The traffic signal priority control system of claim 21, wherein the vehicle-mounted device is a radio communication device, and wherein the receiving device is a computer system that can send and receive digital data to and from the radio communication device,

and wherein the system further comprises a traffic signal control system in communication with the computer system that selectively controls a plurality of traffic signals via at least one of a traffic signal priority request and a traffic signal priority cancellation from the computer system.

24. The traffic signal priority control system of claim 23, wherein the computer system has a message forwarding service function that selectively forwards at least one of the traffic signal priority request and the traffic signal priority cancellation to the traffic signal control system.

25. The traffic signal priority control system of claim 24, wherein the message forwarding service function comprises:

a configuration function that allows selective enabling and disabling of forwarding of at least one of the traffic signal priority request and the traffic signal cancellation to the traffic signal control system;

an implementation function that manages at least one of the traffic signal priority request and the traffic signal cancellation from a plurality of vehicles; and

an interface that provides a communication link between the computer system and the traffic signal control system.

26. The system of claim 25, further comprising a computer data storage device, wherein the implementation function writes a traffic signal priority request and cancellation history to generate a historical summary report.

27. The traffic signal priority control system of claim 25, wherein the configuration function selectively enables and disables signal forwarding based on at least one characteristic selected from the group consisting of a selected individual vehicle, group of vehicles, group of vehicles with a same vehicle type, vehicle route, specific intersection, group of intersections, time profile, and quota of total traffic signal priority requests issued during a given time window.